

## V.A.5.N.h. Short alpine or subalpine dry bunch grassland

### V.A.5.N.h.5. DANTHONIA PARRYI HERBACEOUS ALLIANCE

#### Parry's Oatgrass Herbaceous Alliance

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#### DANTHONIA PARRYI HERBACEOUS VEGETATION

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#### ELEMENT CONCEPT

**GLOBAL SUMMARY:** This plant association most commonly occurs in forest openings, in montane meadows or parks in the Colorado Rocky Mountains and in adjacent parts of Wyoming. Stands occur from 2260-3350 m (7400-11,000 feet) in elevation. The soils are more moist than those of adjacent grasslands dominated by *Festuca arizonica* and are composed of a silty clay with granitic gravel. Stands are usually less than 50 acres, but occasionally are reported to be up to 600 acres in size. Ungrazed or lightly grazed stands of this association are characterized by dense stands of *Danthonia parryi*. Other common species include *Festuca arizonica*, *Festuca idahoensis*, *Koeleria macrantha*, *Muhlenbergia montana*, *Poa pratensis*, *Elymus trachycaulus* and *Carex inops* ssp. *heliophila*. *Muhlenbergia montana* may be more abundant on drier sites or those impacted by livestock grazing.

#### ENVIRONMENTAL DESCRIPTION

**USFWS Wetland System:** Upland

**Florissant Fossil Beds NM Environment:** This native bunchgrass forms nearly pure stands on moist soils of the middle and higher elevations (8400–8600 feet) within the monument. This herbaceous vegetation is distributed predominantly on north- and northwest-facing exposures on slopes, in narrow mesic drainages, and on hilltops where mesic conditions occur. Stands occupy bands 10-25 m wide at the base of mesic forests, and forms a broad understory in relatively open, mesic woodlands composed primarily of *Pseudotsuga menziesii*, *Populus tremuloides*, and *Pinus ponderosa*. *Danthonia parryi* persists following invasion by tree species as a dense to sparse understory, dependent on the age of the stand and amount of canopy closure.

**Global Environment:** Stands occur from 2260-3350 m (7400-11,000 feet) in elevation, in forest openings, montane meadows and parks. The soils are more moist than those of adjacent grasslands dominated by *Festuca arizonica* and are composed of a silty clay with granitic gravel.

#### VEGETATION DESCRIPTION

**Florissant Fossil Beds NM Vegetation:** This herbaceous vegetation is characterized by strong dominance of *Danthonia parryi*, but good species diversity exists within stands. It is a relatively short grassland type, less than 0.5 m in height, and the foliar cover ranges from 60-90%. The ground cover consists of dense litter ranging from 95-100% cover and up to 5 cm thick. Commonly associated graminoids are other bunch grasses, including *Festuca arizonica*, *Muhlenbergia montana*, and *Bromus porteri*. For some stands, *Bromus porteri* is relatively dense on the outer, drier edge of the stand, providing an ecotone with *Festuca arizonica* grassland types. Forbs are also common in these stands, particularly *Besseyia plantaginea*, *Achillea millefolium* var. *occidentalis* (= *Achillea lanulosa*), and *Geum macrophyllum*. These stands range from approximately 0.25 hectare to over 10 hectares in size. The soils are more moist than those of adjacent grasslands dominated by *Festuca arizonica* or the exotic *Bromus inermis* and are composed of a silty clay among small Pikes Peak granite gravel. It appears that in the absence of fire, this herbaceous vegetation is invaded by *Picea pungens*, *Pseudotsuga menziesii*, and *Pinus ponderosa* trees.

This type has a distinct signature on CIR aerial photography with a smooth, pink color located next to very tall stands of mesic forest species. On true color aerial photography, the signature is a dark grayish brown.

**Global Vegetation:** Ungrazed or lightly grazed stands of this association are characterized by dense stands of *Danthonia parryi*. Other common species include *Festuca arizonica*, *Festuca idahoensis*, *Koeleria macrantha*, *Muhlenbergia montana*, *Poa pratensis*, *Poa secunda*, *Poa fendleriana*, *Elymus trachycaulus*, and *Carex inops* ssp. *heliophila*. *Muhlenbergia montana* may be more abundant on drier sites or those impacted by livestock grazing. Forbs are diverse but contribute little cover (usually less than 10%) and include *Besseyia plantaginea*, *Achillea millefolium* var. *occidentalis* (= *Achillea lanulosa*), *Geum macrophyllum*, *Antennaria rosea*, *Eriogonum umbellatum*, *Gaillardia aristata*, *Gentiana* spp., *Mertensia lanceolata*, *Penstemon* spp., and *Potentilla hippiana*. The dwarf-shrub *Artemisia frigida* is often scattered through these stands.

**Global Dynamics:** Fire has been suggested as a management tool in some cases where pine is encroaching into the grassland meadows. *Danthonia parryi* is considered to be very palatable to livestock, and overgrazing has been reported in some stands which reduces the abundance of *Danthonia parryi*.

#### MOST ABUNDANT SPECIES

##### Florissant Fossil Beds NM

<u>Stratum</u>	<u>Species</u>
Graminoid	<i>Danthonia parryi</i> , <i>Festuca arizonica</i> , <i>Muhlenbergia montana</i> , <i>Bromus porteri</i>
Forb	<i>Besseyia plantaginea</i> , <i>Achillea millefolium</i> , <i>Geum macrophyllum</i>

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#### CHARACTERISTIC SPECIES

##### Florissant Fossil Beds NM

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#### OTHER NOTEWORTHY SPECIES

##### Florissant Fossil Beds NM

<u>Global Stratum</u>	<u>Species</u>
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#### GLOBAL SIMILAR ASSOCIATIONS:

##### SYNONYMY:

- DRISCOLL FORMATION CODE:V.C.5.b. (Driscoll et al. 1984)
- *Danthonia parryi* (Bourgeron and Engelking 1994)

#### GLOBAL STATUS AND CLASSIFICATION COMMENTS

**Global Conservation Status Rank:** G3.

**Global Classification Comments:** The classification is based on plot data and recently collected qualitative data. *Danthonia parryi* is reported to form dense communities on windy slopes and ridges in Canada but no data were presented. It is not understood how this plant community reported in Canada may relate to the *Danthonia parryi* plant association in Colorado and Wyoming.

#### ELEMENT DISTRIBUTION

**Florissant Fossil Beds NM Range:** This is an association of moist soils, located on predominantly north- and northwest-facing slopes, and growing in a band adjacent to *Picea pungens*, *Pseudotsuga menziesii*, and *Populus tremuloides* forest stands. These sites receive additional moisture due to accumulation of snowfall and are shaded for at least a portion of the day by the tall trees, often in excess of 30 m in height. Stands of *Danthonia parryi* are distributed at the middle to higher elevations of the monument.

**Global Range:** This association is reported from the southern Rocky Mountains in Colorado, mainly from the South Platte, Arkansas, and Rio Grande River drainages, but with a few reports from the Colorado River drainage. The association also occurs in southern Wyoming.

**Nations:** US

**States/Provinces:** CO WY

#### ELEMENT SOURCES

**Florissant Fossil Beds NM Inventory Notes:** Plots 29, 50, 51

**Classification Confidence:** 1 **Identifier:** Cegl001795

**REFERENCES:** Bourgeron and Engelking 1994, Driscoll et al. 1984, Hess 1981, Looman 1983, Reid and Love 1951, Robbins 1918, Ueckert 1968.